

USDA 2003 Agriculture Outlook Forum

Transportations Role on Competitiveness Effects of Rail Services and Capacity

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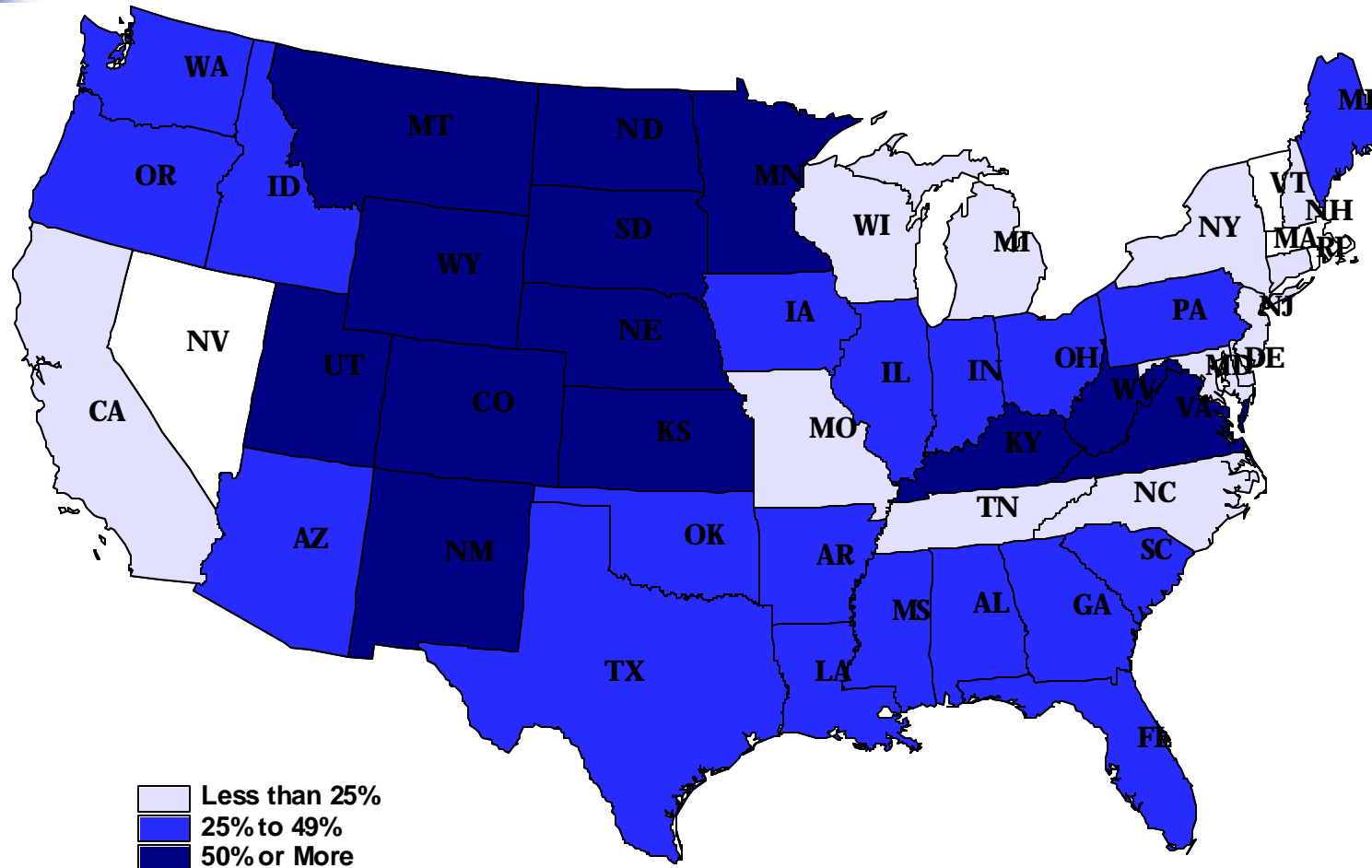


Context

- Transportation and logistics are key to global competitiveness (has to be put into context itself)
 - Steve Fuller, et. al., Texas A&M
- Transportation a substantial portion of delivered price
- Principle of economics – mobility is fundamental to enhancing competition

Rail Use in Grain Shipping

- *Ton Miles* -





Cover Two Broad Points

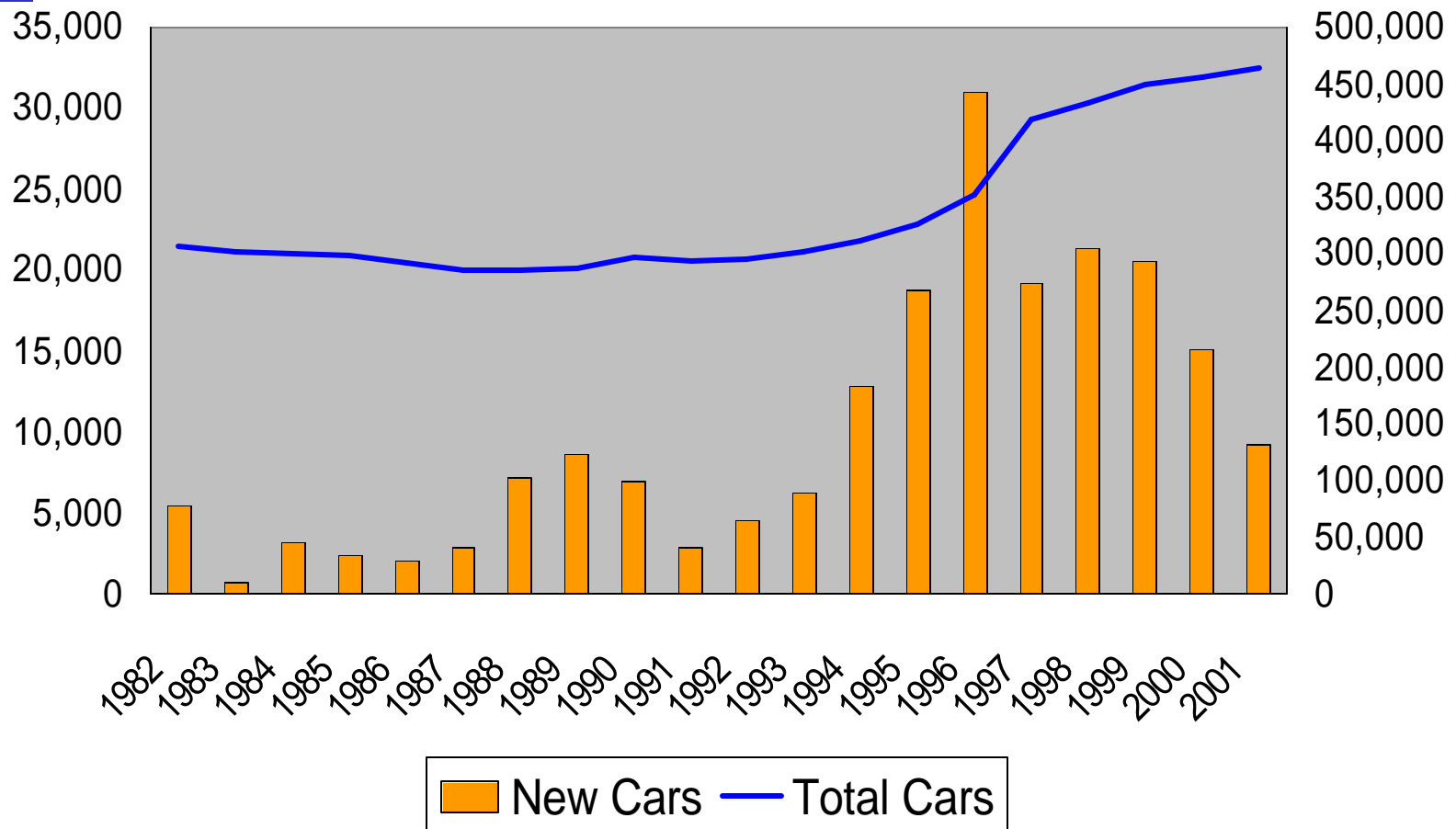
- Present situation
- Three looming issues
 - Shortline and light density rail viability
 - Availability of viable intermodal service
 - Can Class I railroads survive in the long run
- These issues are related to the present situation



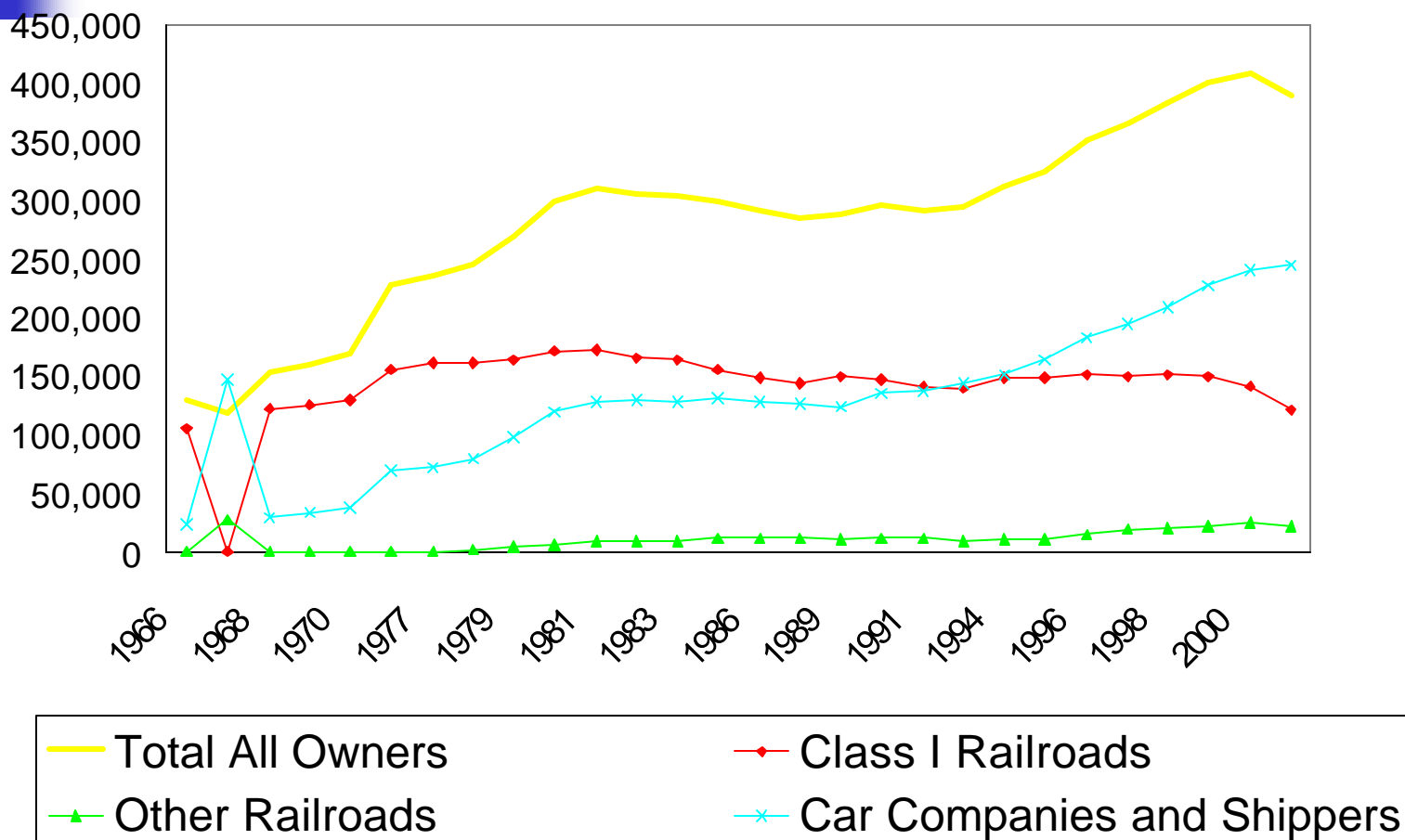
Present Capacity

- Size the church for Easter or average Sunday
 - We will always have shortages unless we want to pay for excess capacity
- Ability to move grain has increased substantially over the past two decades
 - 1970's vs. today

Covered Hopper Cars Placed in Service



Hopper Car Ownership





Capacity (cont.)

- Efficiency gains through larger movements and fewer terminals – shuttle trains
- ND Example – wheat to Portland
 - 110 car train, 410,000 bushels, 14 sq miles of production in the Red River Valley
 - Cost savings in car days, locomotive days, crew costs, terminal costs, clerical, etc
 - Rev/Var Cost ratios to PNW reflects efficiencies
 - Single car 1.85
 - 52 car 2.71
 - Shuttle train 3.11



Shuttle Train Incentives

<u>Estimated Incentive</u>	<u>\$/Car</u>	<u>\$/Bu</u>
Rate (vs. 52-car)	\$150	\$0.04
Origin Efficiency	\$100	\$0.03
Destination Efficiency	\$100	\$0.03
24-Trips (Seasonal)	\$150	\$0.04
Commodity (Wheat)	\$50	\$0.01
TOTAL	\$550	\$0.15

Bushel est. based on 3,600 Bushels/Car





Efficiencies only One Reason

- Complexity of network economics
 - Combinations explode exponentially as nodes increase
 - Corresponding increase in cost and operational difficulty
- Class I railroads are simplifying their system to improve dependability, efficiency, profitability



Matt Rose: Speech to PNWARS

- “The coal and intermodal networks are well defined, with a limited number of origins and destinations and a network of O/D pairs that makes it fairly straightforward to define a service plan and execute consistently against that service plan. The grain shuttle network – the part of the grain network that works best, in terms of on-time performance and reliability – shares that characteristic of a limited number of origins and destinations, and well-defined service standards.”



Leads to 3 Looming Issues

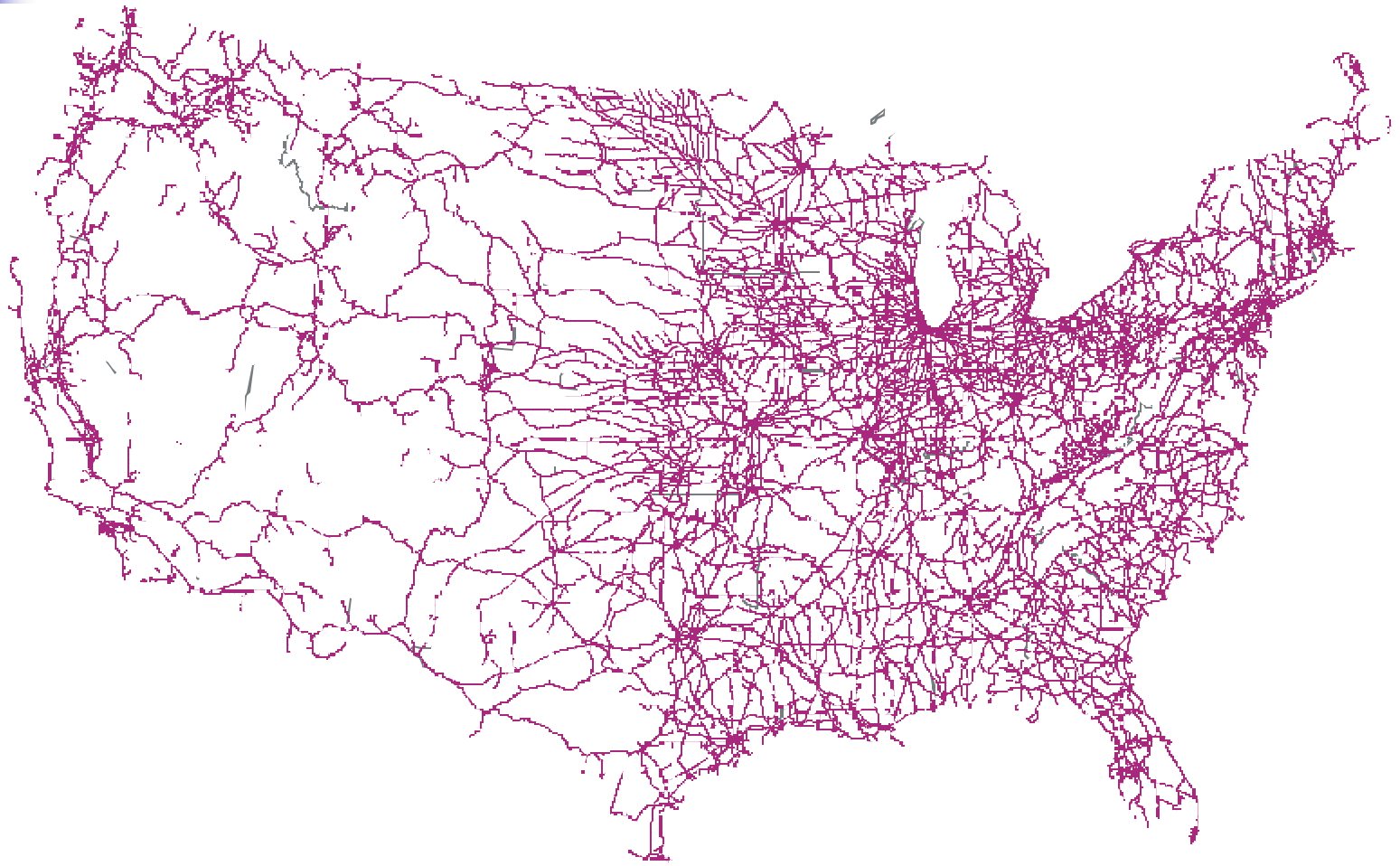
- Viability of shortlines
- Availability of Intermodal Service
- Long run viability of Class I's



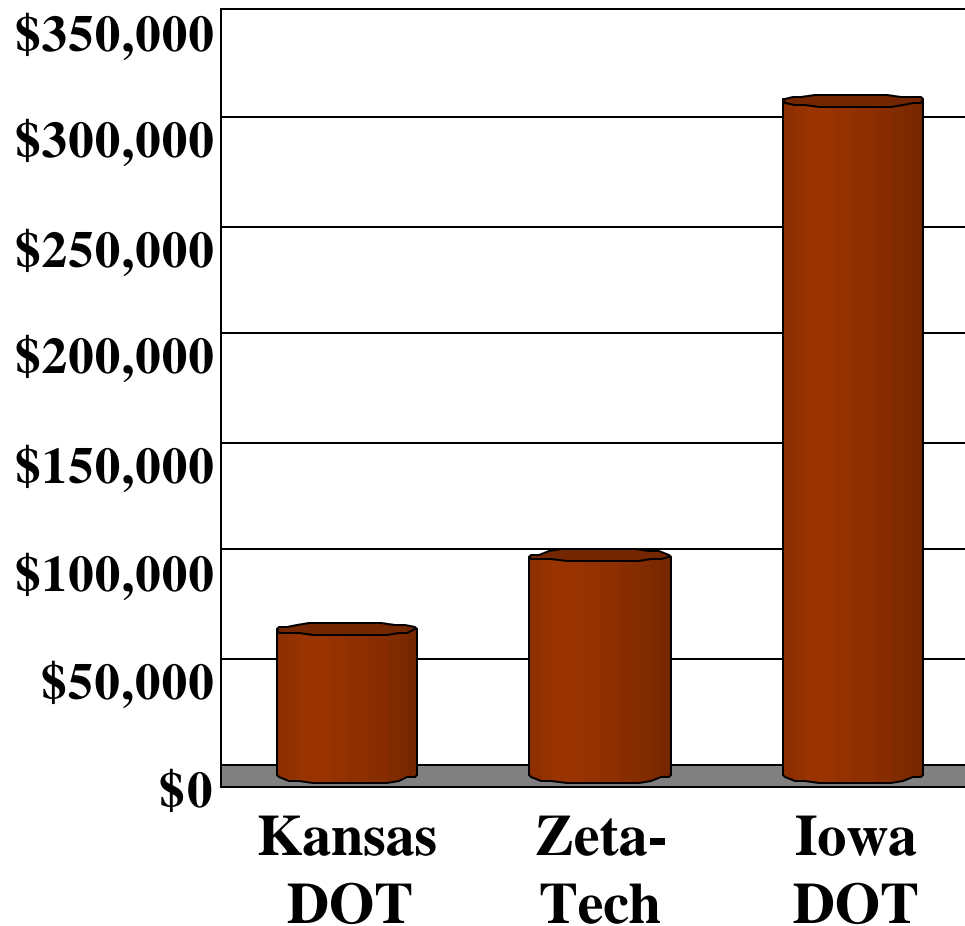
Shortlines

- Tremendous job at what Class I's can't do
 - Service smaller shippers
 - Operate more efficiently in complex small networks
 - Gather and distribute local freight efficiently
- Issues
 - Shortline network not as necessary in shuttle train environment
 - Upgrading for 286,000 lb cars

US Rail Network



Estimated Costs per Mile to Upgrade Short-Line Rail Lines to Handle 286,000 Pound Cars (Three Studies)





Viability of Intermodal

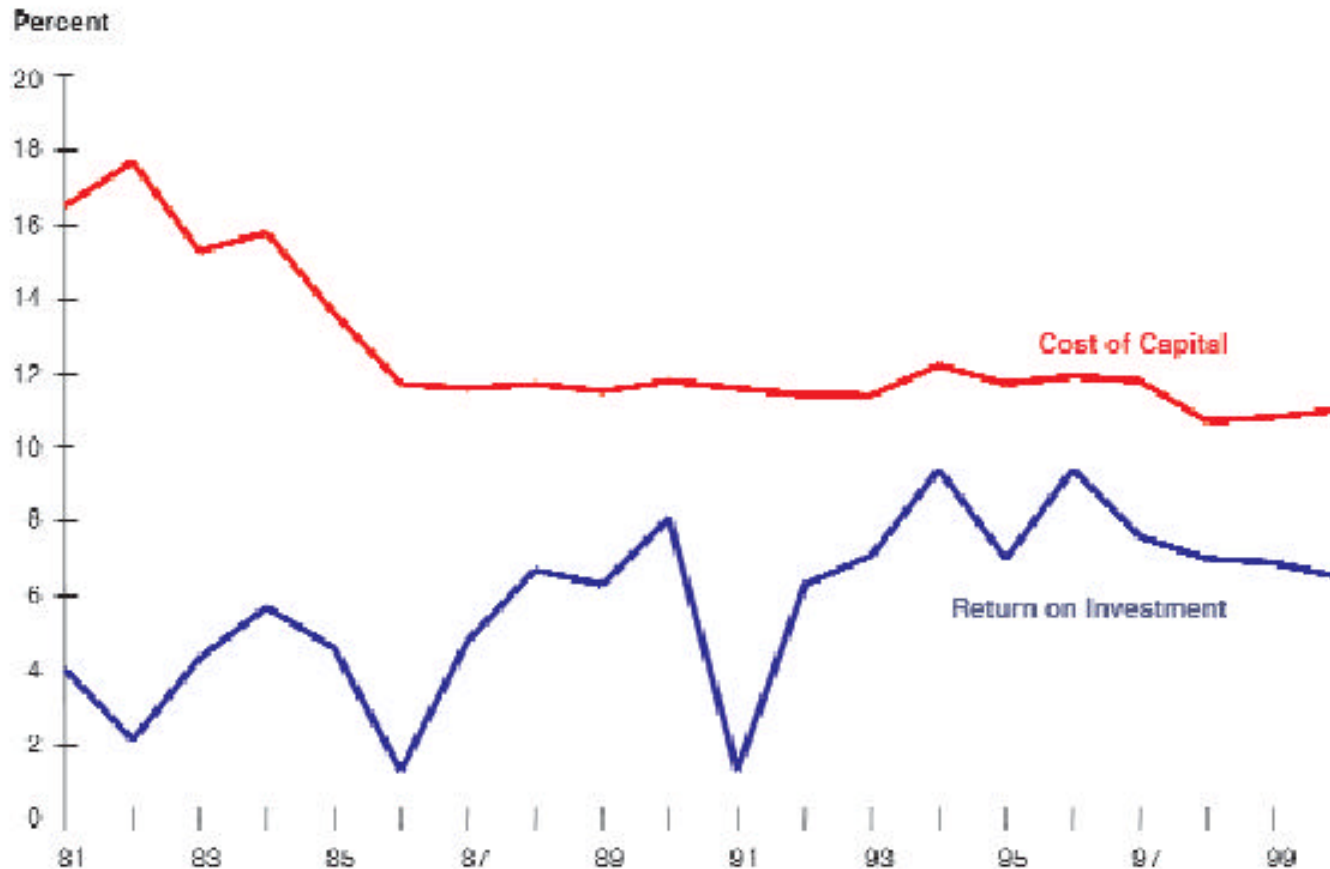
- Growth in ag/food trade will not be in bulk commodities but I.P., specialized, and processed
- This will require container shipping
- Providing capacity at competitive rates is in conflict with simplified network
- Turn around time of containers is also an issue



Long Run Viability of Class I's

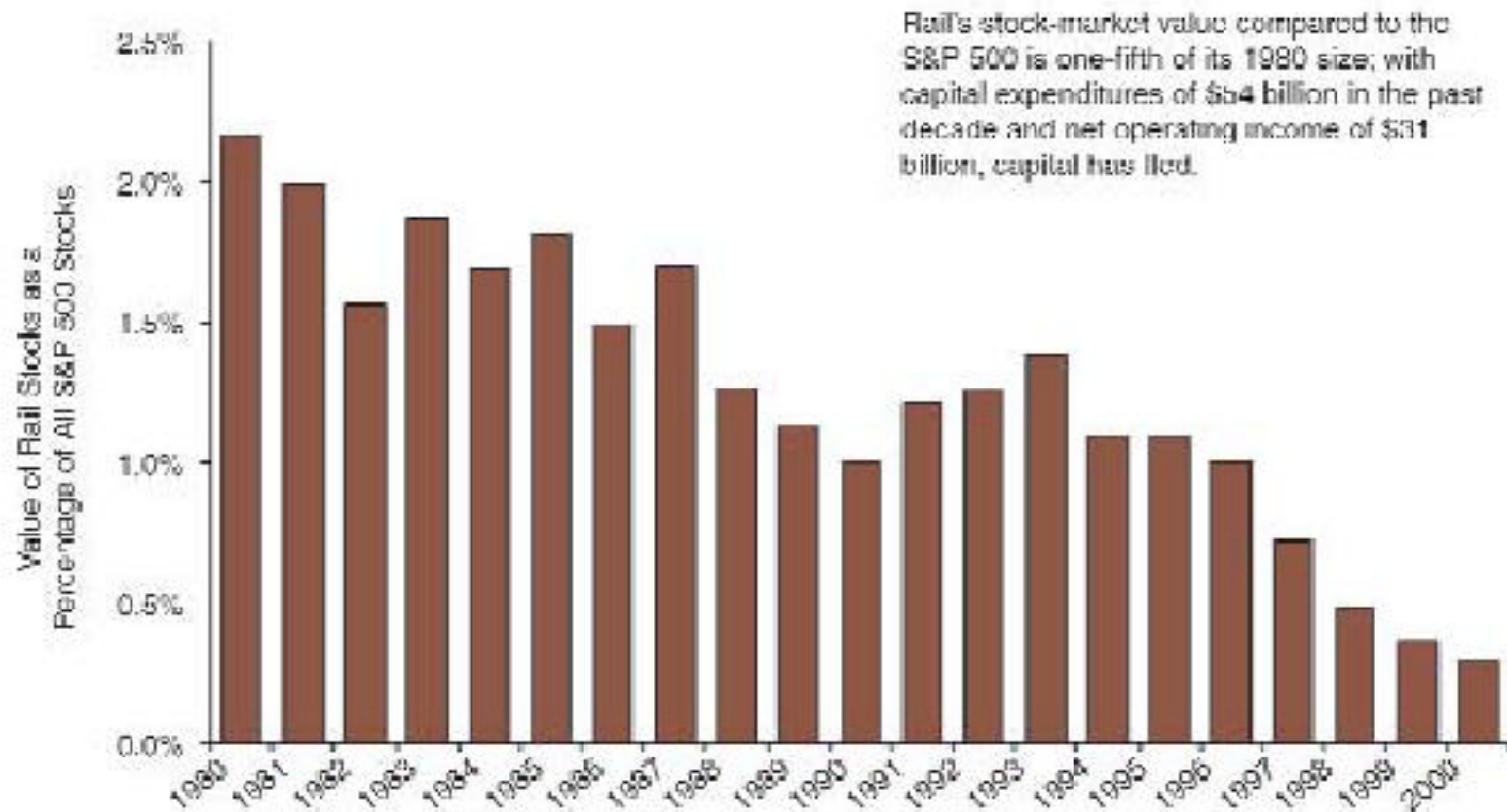
- Context – Class I's have to survive in a market driven, capitalistic system where there is competition for financial capital
- Have not sought public sector support, for the most part
- However, this may change for a couple of reasons
 - Lack of profitability
 - Potential for a dramatic changes in energy production

Class I's ROI vs. Cost of Capital



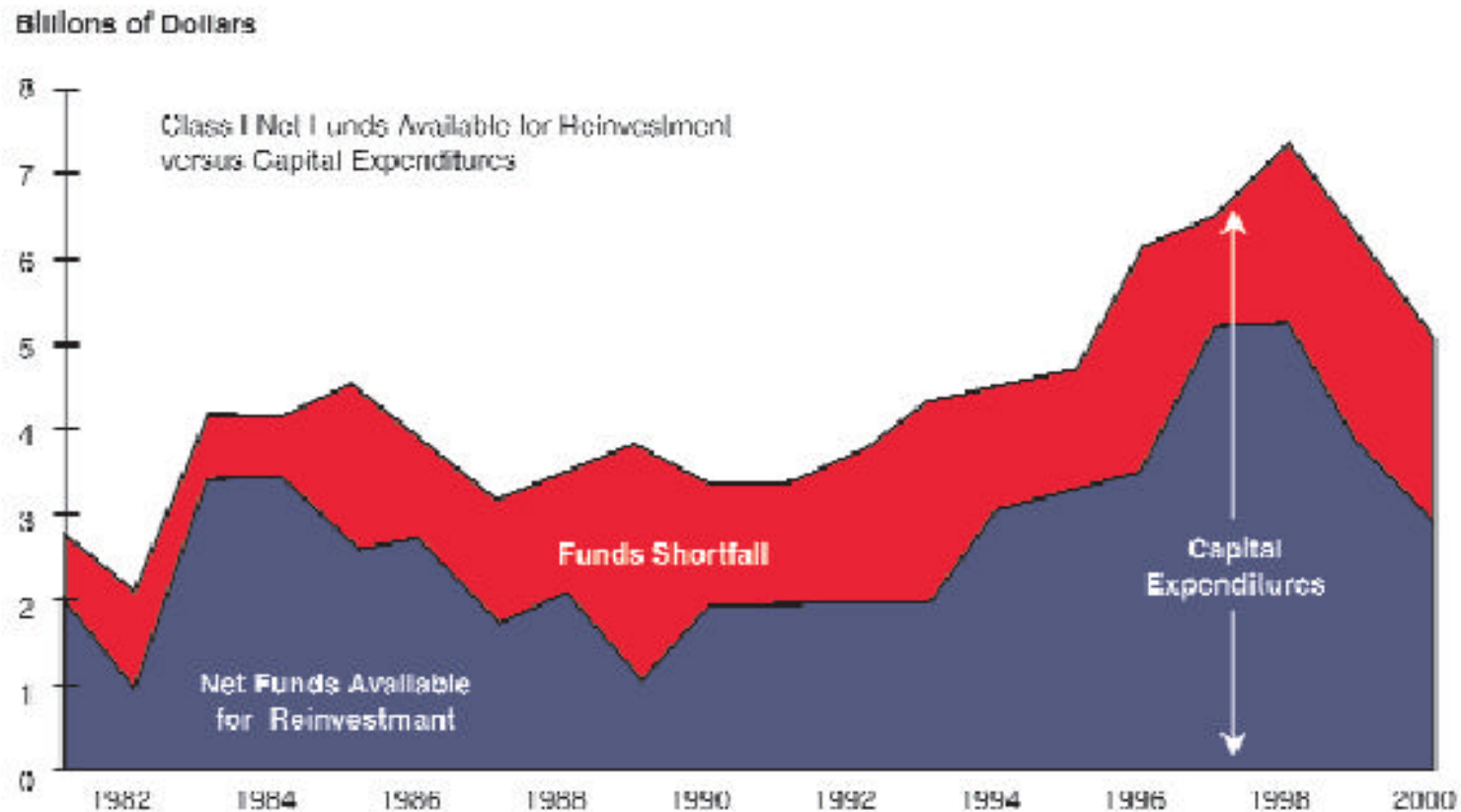
Source: Louis Thompson, World Bank

Rail's Stock Market Value



Source: Morgan Stanley, Standard & Poors

Capital Expenditure Deficit



Source: AAR



Causes - Speculations

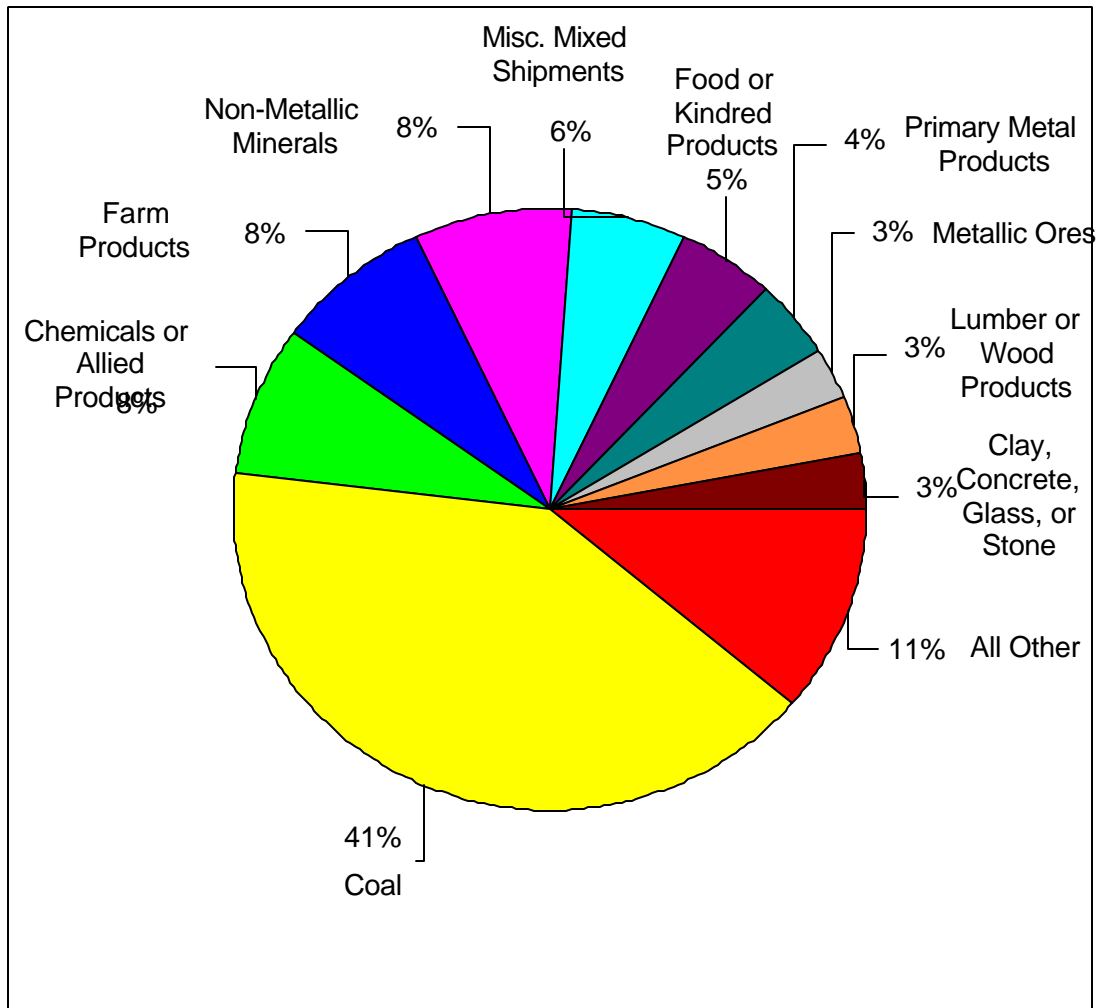
- One of the oldest industries in the world
 - Technologically mature
 - No breakthroughs to reduce costs or improve the type of service
 - Markets are mature
 - No great increases in existing market share or new markets
 - Existing markets are commodity based
 - Profit margins are already maxed out
 - Increased competition from foreign countries is probable
 - Cost savings from rationalization and other management initiatives Have been mostly realized



Distributed Energy Production

- Technology driven
 - Much more efficient solar cells
 - Fuel cells in homes and businesses
 - High efficiency gas turbines
 - Wind power
 - Wave power
- Shift could come in next twenty years
- What does this have to do with railroads

Rail Tonnage by Commodity





Conclusions

- Things are pretty good at the moment
- Long run is cloudy and uncertain
 - Shortline network will diminish in size
 - Intermodal could be expensive and thus reduce profits and market share for producers
 - How can the present private sector rail system survive



Notes of Interest

The U.S. rail system included 40 Class I rail carriers and 179,000 miles of road in 1980. Farm products comprised 8 percent of the 23 million car loadings in that year, with the two largest grain hauling railroads accounting for 30 percent of the grain revenue car loadings (AAR, *The Grain Book*). In 2001, eight Class I rail carriers owned 97,631 miles of road - a 46 percent decline from 1980. The most recent data showed that 5.4 percent of the total 27 million cars loaded were farm products (AAR, *Railroad Facts*). Although farm share of the total rail ton-miles has declined, total rail ton-miles have increased 63 percent over the past two decades, growing from 918,958 million in 1980 to 1,495,472 million in 2001 (AAR, *Railroad Facts*).



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